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21171	7590	05/11/2004	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			CHEN, PO WEI	
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			2676	7

DATE MAILED: 05/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/810,412

Applicant(s)

IIDA ET AL.

Examiner

Po-Wei (Dennis) Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2 is/are allowed.
- 6) ☒ Claim(s) 3-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

In response to an Amendment received on March 1, 2004. This action is final.

Claims 2-17 are pending in this application. Claims 2-17 are independent claims.

The present title of the invention is "Three-Dimensional Object Display System, Three-Dimensional Object Display Method and Recording Medium Recording a Three-Dimensional Object Display Program".

The Group Art Unit of the Examiner case is now 2676. Please use the proper Art Unit number to help us serve you better.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stolarz (US 6,240,421) and further in view of Tsuda et al. (US 6,535,232; refer to as Tsuda herein).

3. Regarding claim 5, Stolarz discloses a system for organizing, storing and retrieving information from a computer database comprising:

A three-dimensional object display system ("The system includes a means for locating the virtual file folders in a three dimensional address structure having an X-axis with a plurality of first descriptors, a Y-axis with a plurality of second descriptors and a Z-axis with a plurality of third descriptors", see lines 9-16 of column 3 and Fig. 11A-C);

A server providing object information (“In one embodiment, an information organization, storage and retrieval system includes a memory storage device operably connected to a computer”, see lines 3-9 of column 3 and Fig. 1; Also see lines 25-40 of column 2). It is noted that while the claim recites a server, however, Stolarz discloses that the information can be stored in any computer. And a server is simply a computer that host the information in a network environment, which is been taught by Stolarz. Thus, limitation of claim is met;

An object data storage unit storing information corresponding to the object attributes and displaying data for each object (“A plurality of virtual file folders that contain items of information are labeled with different identifiers and stored in the memory storage device”, see lines 3-16 of column 3 and Fig. 11A-C);

A three-dimensional space data production unit that searches the object data storage unit (“A blank ‘Find’ screen contains information fields that are blank to allow a user to insert information as desired to be used as criteria to find Files based on the information provided”, see lines 44-57 of column 18 and Fig. 9C; Also see lines 3-16 of column 3), positioning the object data in three-dimensional space by matching values for three types of object attributes selected from among a plurality of object attributes stored in the object data storage unit for each object to each of three coordinate axes in three dimensional space, and displays the object according to a predetermined vantage point (“The Filecube Navigator Icon automatically changes to reflect the current status of the File Attributes of File Phase, File Type and File Category (X,Y and Z coordinates) of any specific File or Item or groupings of Files and Items”, see lines 25-38 and lines 44-57 of column 18 and Fig. 9B-C and 15A-P). It is clear that the three-dimensional visualization discloses by Solarz is viewed from a predetermined vantage point, see Fig. 15A-P;

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A client terminal selecting an object from the object information provided (“FIG. 5 depicts a typical entry screen or Home Page for entry into the system when the software of the invention is launched... This home page acts as the front door or access door into the system”, see lines 6-16 of column 13 and Fig. 5). It is further noted that the software is operated on a computer that is able to connect to different networks (see lines 56-65 of column 9 and Fig. 1B). Therefore, the computer is functioning as a client terminal. Thus limitation of claim is met.

A notifying unit selecting the object attributes of a displayed object and notifies the server (“A blank ‘Find’ screen contains information fields that are blank to allow a user to insert information as desired to be used as criteria to find Files based on the information provided... one or more of the file attributes or descriptors of File Phase, General File Category or Type of File filled in”, see lines 44-57 of column 18 and Fig. 9C; Also see lines 3-16 of column 3). It is further noted that while claim recites a notifying unit which notifies the server, it would have been obvious to one of ordinary skill in the art to realize that the software or system disclosed by Solarz is connected to the database, or server (see lines 3-9 of column 3). And by utilizing the search interface disclosed by Solarz, the search interface therefore functions as a notifying unit which notifies the server when search is executed. Thus, limitation of claim is met;

A receiving unit receiving the three-dimensional space data produced by the server (“A method and system and apparatus for the organization, storage and retrieval of information from both computer databases”, see lines 1-3 of abstract and Fig. 11A-C). It is further noted that while claim recites a receiving unit, it would have been obvious to one of ordinary skill in the art to realize that the software or system disclosed by Solarz is connected to the database, or server (see lines 3-9 of column 3). And by utilizing the software or system to retrieving and presenting

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three-dimensional data from database, it functions as a receiving unit. Thus, limitation of claim is met;

The server and the client terminal are connected to the system via a network (see lines 56-65 of column 9 and Fig. 1B).

It is noted that Solarz does not disclose a vantage point changing unit changing the vantage point with respect to the displayed three-dimensional space; when the vantage point is changed, the three-dimensional space data production unit redraws the object according to the changed vantage point. However, this is known in the art taught by Tsuda. Tsuda teaches an apparatus of generating an object based on three-dimensional object data comprising a "view point position determination unit that moves a view point according to the user input and thereby determines a view point position" (see lines 5-7 of abstract, lines 50-67 of column 2 and lines 1-24 of column 3 and Fig. 1; while claim recites redraw, it is clear that by generating the images according to the changing view point position, the images can be considered as redraw by the system). It would have been obvious to one of ordinary skill in the art at the time of invention to utilize the teaching of Tsuda to provide the advantages of allowing the user to control the viewing position in the three-dimensional virtual space.

4. Regarding claim 6, Stolarz discloses a system for organizing, storing and retrieving information from a computer database comprising:

A three-dimensional object display method displaying objects in an apparent three-dimensional space display according to object attributes used as criteria to select one or more objects ("A blank 'Find' screen contains information fields that are blank to allow a user to insert information as desired to be used as criteria to find Files based on the information

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provided...one or more of the file attributes or descriptors of File Phase, General File Category or Type of File filled in”, see lines 44-57 of column 18 and Fig. 9C; Also see lines 3-16 of column 3);

Searching an object data storage unit storing information corresponding to the object attributes (see lines 44-57 of column 18 and Fig. 9C and lines 3-16 of column 3) and displaying data for each object (see Fig. 16B);

Producing three-dimensional space data to position each object by calculating coordinate values for the three-dimensional space in which to position each object based on the object attribute values selected from the object attributes for each object according to results of the search of the object data storage unit so as to display each object according to results of the calculation of the coordinate values for the three-dimensional space (“The Filecube Navigator Icon automatically changes to reflect the current status of the File Attributes of File Phase, File Type and File Category (X,Y and Z coordinates) of any specific File or Item or groupings of Files and Items”, see lines 25-38 and lines 44-57 of column 18 and Fig. 9B-C and 15A-P).

It is noted that Stolarz does not disclose each of the objects positioned in the apparent three-dimensional space display is enclosed within a frame of a uniform size and reduces or enlarges the frame and the objects enclosed therein depending on a distance of the three-dimensional space from a vantage point outside the three-dimensional space. However, this is known in the art taught by Tsuda. Tsuda teaches an apparatus of generating an object based on three-dimensional object data that “determines a view point position according to correlation between the object position and the view point position...receives information about the selected filter and performs control so that a frame of the moving image to be mapped to the

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object is enlarged or reduced by using the selected filter” (see lines 36-67 of column 4 and lines 1-5 of column 5; also see lines 19-32 of column 22 and Fig. 2a, 3, and 9; it is noted that reducing or enlarging process is being done after the frame is generated. Thus, before the reducing or enlarging process, the frame is uniform size). It would have been obvious to one of ordinary skill in the art at the time of invention to utilize the teaching of Tsuda to provide the function of “controlling the reproduction quality of a moving image which is reproduced from a fusion of the moving image and three-dimensional computer in a three-dimensional virtual space” (see lines 56-59 of column 1, Tsuda).

5. Regarding claims 7-9, the statements presented, above, with respect to claim 6 are incorporated herein. It is further noted that Solarz discloses, method, system, software, and apparatus for organizing, storing and retrieving information from a computer database. Also see lines 19-32 of column 37 and 1-31 of column 38 of Solarz.

6. Claims 3, 10, 12, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stolarz (US 6,240,421) and further in view of Brush, II et al. (US 5,982,372; refer to as Brush herein), Tsuda et al. (US 6,535,232; refer to as Tsuda herein) and Hazama et al. (US 6,212,441; refer to as Hazama herein).

7. Regarding claim 3, Stolarz discloses a system for organizing, storing and retrieving information from a computer database comprising:

A three-dimensional object display system for displaying a plurality of objects in an apparent three-dimensional space display according to a plurality of object attributes used as criteria for selecting one or more objects (“The system includes a means for locating the virtual file folders in a three dimensional address structure having an X-axis with a plurality of first

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descriptors, a Y-axis with a plurality of second descriptors and a Z-axis with a plurality of third descriptors”, see lines 9-16 of column 3 and Fig. 11A-C);

An object data storage unit that stores information corresponding to the plurality of object attributes and to display data for each object (“A plurality of virtual file folders that contain items of information are labeled with different identifiers and stored in the memory storage device”, see lines 3-16 of column 3 and Fig. 11A-C);

A three-dimensional space data production unit that searches the object data storage unit (“A blank ‘Find’ screen contains information fields that are blank to allow a user to insert information as desired to be used as criteria to find Files based on the information provided”, see lines 44-57 of column 18 and Fig. 9C; Also see lines 3-16 of column 3),

Calculates coordinate values for three-dimensional space in which to position each object based on the plurality of object attribute values selected from among the object attributes for each object according to results of the search of the object data storage unit; produces three-dimensional space data for displaying each object according to results of the calculation of the coordinate values for the three-dimensional space (“The Filecube Navigator Icon automatically changes to reflect the current status of the File Attributes of File Phase, File Type and File Category (X,Y and Z coordinates) of any specific File or Item or groupings of Files and Items”, see lines 25-38 and lines 44-57 of column 18 and Fig. 9B-C and 15A-P),

It is noted that Stolarz does not disclose disperses the positional coordinates of each object positioned within the apparent three-dimensional space display preventing object data to be displayed in an overlapped state when the objects have identical or contiguous coordinates. However, this is known in the art taught by Brush. Brush teaches a visual metaphor for shortcut

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navigation in a virtual world, or three-dimensional world (see lines 15-17 of column 2), that “separate move-to coordinates should be provided in order to prevent avatar overlap and maintain the desired virtual reality” (see lines 38-40 of column 7 and Fig. 7A). It would have been obvious to one of ordinary skill in the art at the time of invention to utilize the teaching of Brush to provide a three-dimensional presentation desired (see line 40 of column 7, Brush).

The combination of Stolarz and Brush does not disclose reduces the display size of each object. Tsuda teaches an apparatus of generating an object based on three-dimensional object data that “determines a view point position according to correlation between the object position and the view point position...receives information about the selected filter and performs control so that a frame of the moving image to be mapped to the object is enlarged or reduced by using the selected filter” (see lines 36-67 of column 4 and lines 1-5 of column 5). It would have been obvious to one of ordinary skill in the art at the time of invention to utilize the teaching of Tsuda to provide the function of “controlling the reproduction quality of a moving image which is reproduced from a fusion of the moving image and three-dimensional computer in a three-dimensional virtual space” (see lines 56-59 of column 1, Tsuda).

The combination of Stolarz, Brush and Tsuda does not disclose dispersing positional coordinates preventing object data to be displayed in an overlapped state when a distance of the three-dimensional space from a vantage point is within a range. Hazama discloses a method for managing and distributing design and manufacturing information utilizing the method (lines 24-56 of column 67 and lines 1-15 of column 68; it is noted that heuristic such as distance between the viewpoint and the screen area is used to determining object location (positional coordinates) to prevent overlapping on the screen). It would have been obvious to one of ordinary skill in the

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art to utilize the teaching of Hazama to enhance efficiency and organization of design and manufacture information for easy access by the users to reduce overall manufacturing time of jobs (lines 9-37 of column 4, Hazama).

8. Regarding claims 10, 12, 14 and 16, the statements presented, above, with respect to claim 3 are incorporated herein. It is further noted that Solarz discloses, method, system, software, and apparatus for organizing, storing and retrieving information from a computer database. Also see lines 19-32 of column 37 and 1-31 of column 38 of Solarz.

9. Claims 4, 11, 13, 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stolarz (US 6,240,421) and further in view of Ishimoto et al. (US 6,262,694; refer to as Ishimoto herein).

10. Regarding claim 4, statements presented above, with respect to claim 3 are incorporated herein. Furthermore, Stolarz discloses a system for organizing, storing and retrieving information from a computer database comprising:

A display unit selecting and highlighting object data positioned within the divided planes or solid spaces ("Portion 352 of FIG. 12D is a field which indicates the reflect the current status of the File Attributes of File Phase, File Type and File Category of any specific File or Item or grouping of Files and Items", see lines 48-54 of column 24 and Fig. 12D).

It is noted that Stolarz does not disclose a dividing unit that divides the three dimensional space into movable planes or solid spaces. However, this is known in the art taught by Ishimoto. Ishimoto teaches a image display system comprising a "image dividing unit for dividing an input image into a plurality of images based on varying distances from an image pickup position" (see lines 1-3 of abstract and Fig. 1 and 2; by dividing the three dimensional space images into

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images based on the range of distances of pickup position, the images are correspond to movable planes). It would have been obvious to one of ordinary skill in the art at the time of invention to utilize the teaching of Ishimoto to provide the function of displaying the three-dimensional images on a large screen using display units having a relatively simple construction without requiring user to wear special equipment (see lines 60-65 of column 1, Ishimoto).

11. Regarding claims 11, 13, 15 and 17, the statements presented, above, with respect to claim 4 are incorporated herein. It is further noted that Solarz discloses, method, system, software, and apparatus for organizing, storing and retrieving information from a computer database. Also see lines 19-32 of column 37 and 1-31 of column 38 of Solarz.

Allowable Subject Matter

12. Claim 2 is allowed.

13. The following is an examiner's statement of reasons for allowance:

Prior art references do not anticipate or suggest the limitation "where the size of the frame is determined based on a number of articles to be displayed, ease of viewing when displayed, and overall balance" in combination with the other claim limitations in claim 2.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

14. Applicant's arguments filed March 1, 2004 have been fully considered but they are not persuasive.

Regarding claim 5, Applicant argues references Tsuda does not teach or suggest redrawing the object according to the changed vantage point. However, this is known in the art taught by Tsuda (lines 5-7 of abstract, line 50 of column 2 to line 24 of column 3 and Fig. 1). It is noted that the user is able to input view point position (changing vantage point) and the system will reproduce the resulting image accordingly. While claim recites redrawing, it is clear that every time the user input a new view point position, the resulting image will be regenerate accordingly. Also, regarding claims 6-9, Applicant argues reference Tsuda does not disclose reducing or enlarging the moving image depending on a distance of the three-dimensional space from a vantage point outside the three-dimensional space. However, this is known in the art taught by Tsuda (line 36 of column 4 to line 5 of column 5, lines 19-32 of column 22 and Fig. 2, 3 and 9). In Fig. 9, it is noted that the distance between the input object position and view point position being calculated and is used to determine the size of the moving image objects.

Regarding claims 3, 10, 12, 14 and 16, Applicant argues references do not teach or suggest preventing object data to be displayed in an overlapped state when the objects have identically or contiguous coordinates and when a distance of the three-dimensional space from a vantage point is within a range. However, this is known in the art taught by Brush (lines 15-17 of column 2 and lines 38-40 of column 7 and Fig. 7A) and Hazama (line 24 of column 67 to line 15 of column 68). In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper

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hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In this case, Stolarz, Tsuda, Brush and Hazama are all directed to displaying objects in three-dimensional environment (lines 1-6 of abstract, Stolarz; Fig. 2-3 of Tsuda; lines 15-18 and 65-67 of column 2, Brush; line 38 of column 4 to line 18 of column 5, Hazama). By utilizing the teachings of Tsuda, Brush and Hazama, it will provide a better representation of the image objects in three-dimensional environment.

Regarding claims 4, 11, 13, 15 and 17, Applicant argues that reference Ishimoto does not teach or suggest a dividing unit dividing the three-dimensional space into movable planes or solid spaces. However, this is known in the art taught by Ishimoto (lines 1-3 of abstract and Fig. 1-2). While claim recites three-dimensional space, it is clear that the three-dimensional displaying space (constructed using input image and viewing position) is being divided into planes according to the viewing distance between the viewing position and each divided object, and each divided image plane (movable planes) can be moved to the desired position within the space. It would have been obvious to one of ordinary skill in the art at the time of invention to utilize the teaching of Ishimoto to provide the function of displaying the three-dimensional images on a large screen using display units having a relatively simple construction without requiring user to wear special equipment (see lines 60-65 of column 1, Ishimoto). In addition, by utilizing the teaching of Ishimoto, a better three-dimensional image can be constructed since

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each image plane can be accurately placed, thus a more realistic representation can be made where each image plane appears in a precise distance from the view point in the three-dimensional space.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Po-Wei (Dennis) Chen whose telephone number is (703) 305-8365. The examiner can normally be reached on Monday-Thursday from 8:30 AM to 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew C Bella can be reached on (703) 308-6829. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Po-Wei (Dennis) Chen
Examiner
Art Unit 2676

Po-Wei (Dennis) Chen
May 5, 2004



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